Explanation of Testing Accommodations for Students with Disabilities - Math Aids - Accommodation Code 19 (Effective beginning in Fall 2017)

Accommodations provided to students with disabilities as part of the instructional and assessment process should allow equal opportunity to access the assessments in the Virginia Assessment Program. Accommodations based solely on the potential to enhance performance beyond providing equal access are not allowed.

Accommodations used on the state assessments must be documented in the student's Individualized Education Program (IEP) or 504 Plan and used in daily instruction. Using new or unfamiliar accommodations on a state assessment is inappropriate. The IEP team or 504 committee should consider the need for each student to use each accommodation separately.

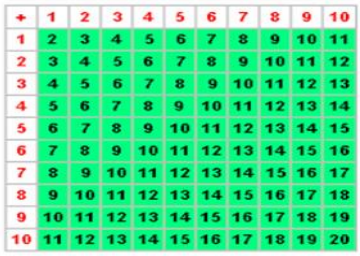
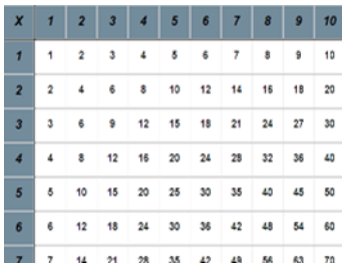
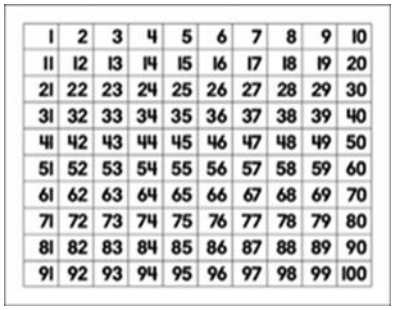
This document contains examples of math aids which are either allowed or not allowed for use by a student with a disability participating in the Virginia Assessment Program. The allowed items pictured in this document are examples of acceptable math aids that may provide some students with disabilities equal access to a state mathematics test.

A math aid does not have to be identical in appearance to the pictured example in order to be used as an accommodation. The math aid should be identical in concept and purpose to the approved math aid included in this document, but the specific attributes of a math aid may vary. For example, the number of rows of beads on an abacus or other counting tool may differ and the number of factors or fractions represented on a multiplication chart or a fraction chart may extend beyond the pictured examples.

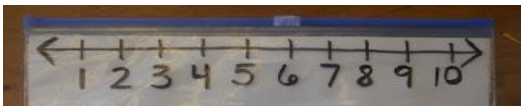
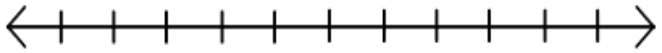
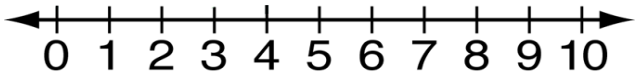
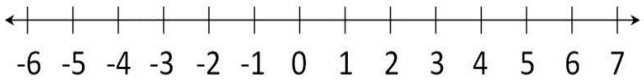
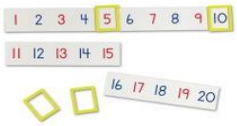
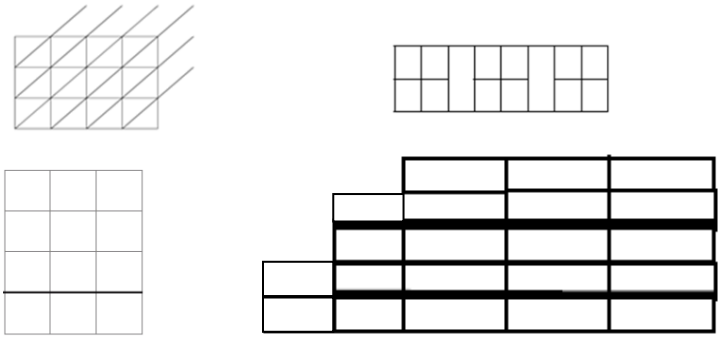
Math aids may be laminated. If a student will write on a laminated math aid, the Additional Markers, Highlighters, Colored Pens, and/or Pencils accommodation must be documented in the IEP or 504 Plan.

Note: Math aids may not be held up to the screen of the testing device.

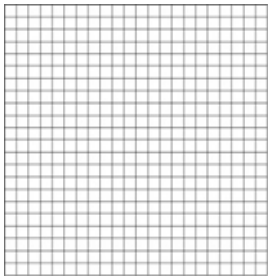
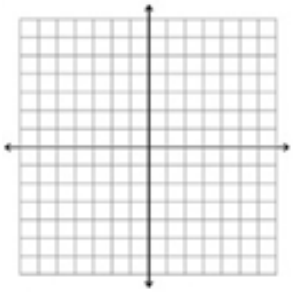
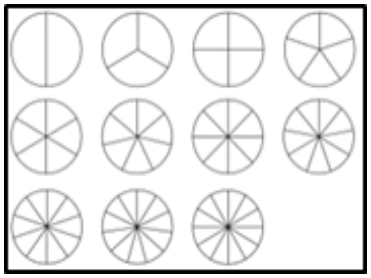
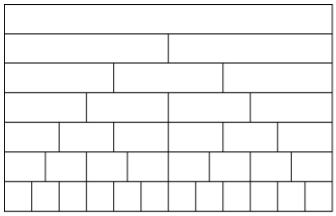
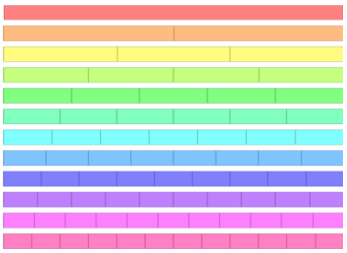
Examples of Math Aids Allowed as Accommodations

Examples of allowed math aids that may provide equal access to mathematics assessment for some students with disabilities	Explanation of the allowed math aid accommodations
Arithmetic Charts  	*Arithmetic Tables/Charts are defined as tools that serve the same function as a four function calculator. The factors represented on an arithmetic chart may vary.* *Students allowed to use this accommodation must be found eligible by their IEP committees/504 teams using the calculator accommodation criteria form that is effective beginning in 2017-2018.*
Arithmetic Machines  	*Addition, subtraction, multiplication or division machines which serve the same function as an arithmetic chart or a four function calculator may be used. Students allowed to use this accommodation must be found eligible by their IEP/504 teams using the calculator accommodation criteria form that is effective beginning in 2017-2018.*
Hundreds Chart 	*A hundreds chart math aid must be limited to 100.* *Students may <u>not</u> use expanded charts which include numbers beyond 100.* *Students may not use hundreds charts containing equations (e.g. 3x3=9).*

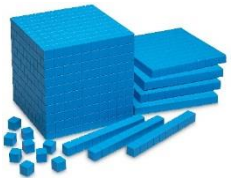
Examples of Math Aids Allowed as Accommodations

Examples of allowed math aids that may provide equal access to the mathematics assessments for some students with disabilities	Explanation of the allowed accommodations
Number Lines     	*The number line should be a graduated straight line with arrowheads on both ends of the line to indicate that real numbers continue indefinitely in the positive and negative directions. There may be multiple number lines on a single page. A number line may be blank or printed with whole numbers. A number line may have a slider to mark the student's place on the number line.*
Counting Strips   	*A student may use a single counting strip of whole numbers or multiple counting strips may be printed on a page.*
Number Alignment Aids 	*Number alignment aids may only be used to assist students in correctly lining up numbers when writing a math problem. Number alignment aids may not contain text, mathematical signs, shaded or colored areas.*

Examples of Math Aids Allowed as Accommodations

Examples of allowed math aids that may provide equal access to the mathematics assessment for some students with disabilities	Explanation of the allowed accommodations
Graph Paper  	*Graph paper with or without a coordinate plane may be used.*
Fraction Circles and Bars    	*Fraction circles must be blank without text. Each piece of a fraction circle must be one solid color. Fraction circles may be cut apart or on a whole page.* *Fraction bars must be blank without text. Each piece of a fraction bar must be one solid color. Fraction bars may be cut apart or on a whole page.*
Cuisenaire Rods  	*Cuisenaire rods are blank three-dimensional manipulatives of varying lengths and colors which may be used for counting and calculation.*

Examples of Math Aids Allowed as Accommodations

Examples of allowed math aids that may provide equal access to the mathematics assessment for some students with disabilities	Explanation of the allowed accommodations
Base 10 Blocks 	*Base 10 blocks are manipulatives composed of various sized units used for counting or calculating. Base 10 blocks must be blank other than the scoring used to indicate the various units.*
Counting Tools    	*Abacus, Golf Beads, and Rekenrek math aids are examples of manual aids for counting or calculating that consist of beads or disks that can be moved up or down on a string or stick.*
Colored Shapes   	*Colored shapes are blank and may be two- or three-dimensional.*
Blank Clocks  	*Blank clock math aids may have tick marks but may not have hands or numbers.*

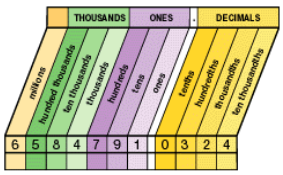
Examples of Math Aids Allowed as Accommodations

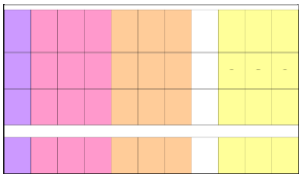
Examples of allowed math aids that may provide equal access to the mathematics assessment for some students with disabilities	Explanation of the allowed accommodations
Money 	*A student may use coins and bills as a manipulative for calculating money amounts. Play money that does not resemble US currency may not be used.*

Examples of Math Aids NOT Allowed as Accommodations

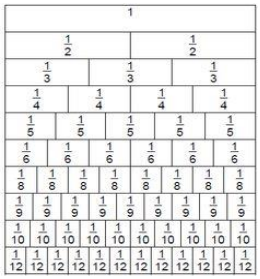
Examples of math aids that have the potential to enhance performance beyond providing equal access and are NOT allowed for the mathematics assessments

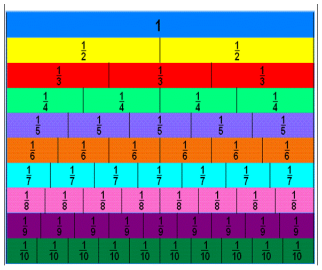
Place Value Chart





Fraction Chart





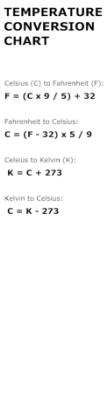
Tables of Measures

from \ to	= __ feet	= __ inches	= __ miles	= __ yards
foot		12	1/5280	1/3
inch	1/12		1/63360	1/36
mile	5280	63360		1760
yard	3	36	1/1760	

Measurement Conversion Charts

Liquid (Fluid or Volume) Measurements (approximate):			
1 teaspoon		1/3 tablespoon	5 ml
1 tablespoon	1/2 fluid ounce	3 teaspoons	15 ml, 15 cc
2 tablespoons	1 fluid ounce	1/8 cup, 6 teaspoons	30 ml, 30 cc
1/4 cup	2 fluid ounces	4 tablespoons	59 ml
1/3 cup	2 2/3 fluid ounces	5 tablespoons + 1 teaspoon	79 ml
1/2 cup	4 fluid ounces	8 tablespoons	118 ml
2/3 cup	5 1/3 fluid ounces	10 tablespoons + 2 teaspoons	158 ml
3/4 cup	6 fluid ounces	12 tablespoons	177 ml
7/8 cup	7 fluid ounces	14 tablespoons	207 ml
1 cup	8 fluid ounces/ 1/2 pint	16 tablespoons	237 ml
2 cups	16 fluid ounces/ 1 pint	32 tablespoons	473 ml
4 cups	32 fluid ounces	1 quart	946 ml
1 pint	16 fluid ounces/ 1 pint	32 tablespoons	473 ml
2 pints	32 fluid ounces	1 quart	946 ml, 0.946 liters
8 pints	1 gallon/ 128 fluid ounces		3785 ml, 3.78 liters
4 quarts	1 gallon/ 128 fluid ounces		3785 ml, 3.78 liters
1 liter	1.057 quarts		1000 ml
1 gallon	128 fluid ounces		3785 ml, 3.78 liters

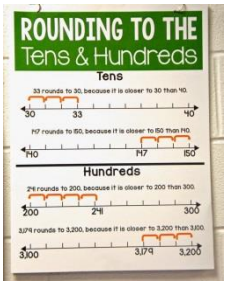
Temperature Conversion Charts

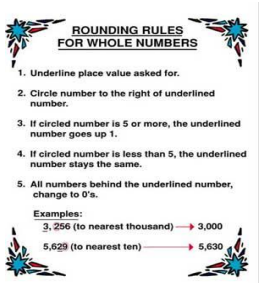


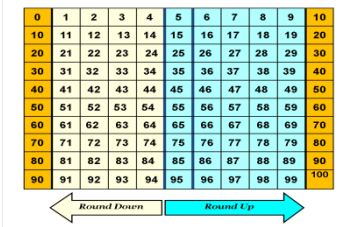
Celsius	Fahrenheit	Kelvin
110	230	383
100	212	373
90	194	363
80	176	353
70	158	343
60	140	333
50	122	323
40	104	313
30	86	303
20	68	293
10	50	283
0	32	273
-10	14	263
-20	-4	253
-30	-22	243

Celsius °C	Fahrenheit °F
-30 °C	-22 °F
-20 °C	-4.0 °F
-10 °C	14.0 °F
0 °C	32.0 °F
1 °C	33.8 °F
2 °C	35.6 °F

Rounding Charts



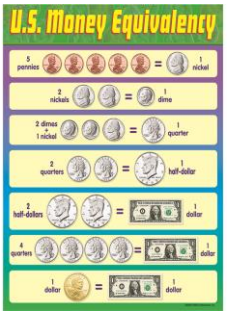




Examples of Math Aids NOT Allowed as Accommodations

Examples of math aids that have the potential to enhance performance beyond providing equal access and are NOT allowed for the mathematics assessments

Money Equivalency Chart



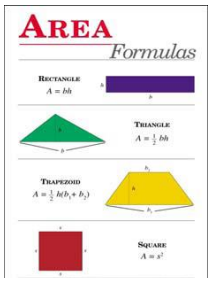
Vocabulary Charts

Word	Definition
Acute angle	An angle that measures between 0 and 90 degrees
Acute triangle	All angles in the triangle are acute
Adjacent angles	Two coplanar angles with a common side, a common vertex, and no common interior points
Angle	The shape formed by two rays (called sides of the angle) with the same endpoint (called the vertex of the angle). In geometry an angle can be defined by the vertex or by the rays and vertex.
Angle bisector	A ray that divides an angle into two congruent (equal) angles
Arc	Part of a circle

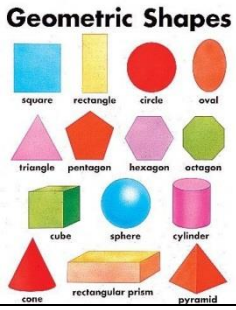
Word	+	√	-	Example	Definition
Associative	+			(2 x 3) x 4 = 2 x (3 x 4)	When you multiply 3 or more numbers, it does not matter what order they are in.
Commutative	+			4 x 8 = 8 x 4	When you multiply numbers, it does not matter what order they are in.
Distributive			-		

Time Conversion or Equivalency Charts

Charts of formulas and/or symbols



Shape Charts

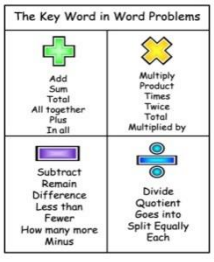


Tally Mark Chart

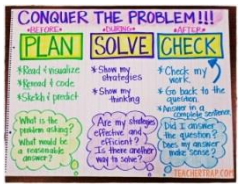
I = 1	𝍸 I = 6
II = 2	𝍸 II = 7
III = 3	𝍸 III = 8
IIII = 4	𝍸 IIII = 9
𝍸 = 5	𝍸 𝍸 = 10

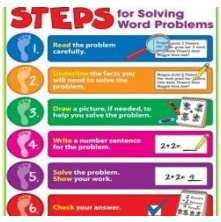
Problem Solving Charts (Key Words)

+	−	x	÷	=
sum increased combine plus more than	difference decreased less than take away	product times factor twice (2x's) triple (3x's)	quotient divide into out of split break up	is total result same as equivalent to



Problem Solving Charts (Steps to Solve a Mathematics Problem)

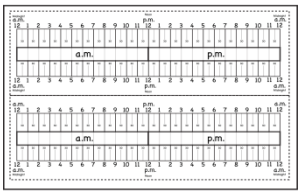




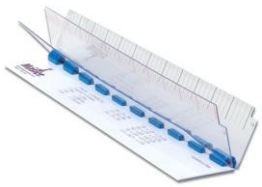
Examples of Math Aids NOT Allowed as Accommodations

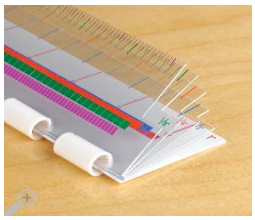
Examples of math aids that have the potential to enhance performance beyond providing equal access and are NOT allowed for the mathematics assessments

Elapsed Time Ruler



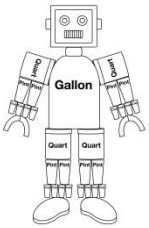
Multi Layer Rulers





Clocks

Gallon Man



Scissors

Set of Weights

Multiplication Equation Chart

1 x 1 = 1	2 x 1 = 2	3 x 1 = 3	4 x 1 = 4	5 x 1 = 5	6 x 1 = 6	7 x 1 = 7	8 x 1 = 8	9 x 1 = 9	10 x 1 = 10
1 x 2 = 2	2 x 2 = 4	3 x 2 = 6	4 x 2 = 8	5 x 2 = 10	6 x 2 = 12	7 x 2 = 14	8 x 2 = 16	9 x 2 = 18	10 x 2 = 20
1 x 3 = 3	2 x 3 = 6	3 x 3 = 9	4 x 3 = 12	5 x 3 = 15	6 x 3 = 18	7 x 3 = 21	8 x 3 = 24	9 x 3 = 27	10 x 3 = 30
1 x 4 = 4	2 x 4 = 8	3 x 4 = 12	4 x 4 = 16	5 x 4 = 20	6 x 4 = 24	7 x 4 = 28	8 x 4 = 32	9 x 4 = 36	10 x 4 = 40
1 x 5 = 5	2 x 5 = 10	3 x 5 = 15	4 x 5 = 20	5 x 5 = 25	6 x 5 = 30	7 x 5 = 35	8 x 5 = 40	9 x 5 = 45	10 x 5 = 50
1 x 6 = 6	2 x 6 = 12	3 x 6 = 18	4 x 6 = 24	5 x 6 = 30	6 x 6 = 36	7 x 6 = 42	8 x 6 = 48	9 x 6 = 54	10 x 6 = 60
1 x 7 = 7	2 x 7 = 14	3 x 7 = 21	4 x 7 = 28	5 x 7 = 35	6 x 7 = 42	7 x 7 = 47	8 x 7 = 56	9 x 7 = 63	10 x 7 = 70
1 x 8 = 8	2 x 8 = 16	3 x 8 = 24	4 x 8 = 32	5 x 8 = 40	6 x 8 = 48	7 x 8 = 56	8 x 8 = 64	9 x 8 = 72	10 x 8 = 80
1 x 9 = 9	2 x 9 = 18	3 x 9 = 27	4 x 9 = 36	5 x 9 = 45	6 x 9 = 54	7 x 9 = 63	8 x 9 = 72	9 x 9 = 81	10 x 9 = 90
1 x 10 =10	2 x 10 = 20	3 x 10 = 30	4 x 10 = 40	5 x 10 = 50	6 x 10 = 60	7 x 10 =70	8 x 10 =80	9 x 10 =90	10x 10=100